From:	Howe, Robert F
To:	Amy.Juchatz@suffolkcountyny.gov; "Andy Rapiejko (E-mail)"; Carter, John T (BHSO); Brian Jankauskas (brian.jankauskas@dec.ny.gov); Cynthia Costello; Dave O"Hehir (david.ohehir@health.ny.gov); Dikeakos, Maria; Dorsch, William R; "Doug Feldman"; Eng, Joseph (BHSO); Genzer, Peter A; Granzen, Gerald (BHSO); Green, Timothy M; Jerry Collins (jerry.collins@health.ny.gov); John Swartwout (E-mail) (john.swartwout@dec.ny.gov); Kwok, Cheuk; Mahler, Sarah; Mattson, Gail; McCann, Michael (BHSO); Paquette, Douglas E; Pensak, Mindy; Pichs, Maria (CONTR); Racaniello, Vincent; Rebecca Quail (rebecca.quail@dec.ny.gov); Remien, Jason; Shea, Carol; Steve Karpinski (steven.karpinski@health.ny.gov); Sundin, Nora; Theisen, Melanie; Thomas Papura; Troutman, Anne; Gordon, Robert (BHSO); Hartzell, Sharon; Scorca, Michael; Mollin, Jessica; Pocze, Doug; Bruno, Christopher
Subject:	RE: October 4th IAG Teleconference
Date:	Wednesday, October 03, 2018 12:19:26 PM
Attachments:	Draft Response to SCDHS Comments 10-3-18.pdf

Attached are draft responses to the 9/13/18 SCDHS comment letter regarding the Phase 2 PFAS Characterization Work Plan which we will reference during the agenda item #2 update. This also includes the planned Phase 3 sampling of on-site treatment systems, extraction wells, monitoring wells downgradient of the landfills and Sewage Treatment Plant (STP), and the STP effluent.
Bob

From: Howe, Robert F
Sent: Tuesday, October 2, 2018 4:41 PM
To: 'Amy Juchatz' <Amy.Juchatz@suffolkcountyny.gov>; 'Andy Rapiejko (E-mail)' <andrew.rapiejko@co.suffolk.ny.us>; Carter, John T (BHSO) <John.T.Carter@science.doe.gov>; 'Brian Jankauskas (brian.jankauskas@dec.ny.gov)' <brian.jankauskas@dec.ny.gov>; 'Cynthia Costello (cynthia.costello@health.ny.gov)' <cynthia.costello@health.ny.gov>; 'Dave O'Hehir (david.ohehir@health.ny.gov)' <david.ohehir@health.ny.gov>; 'Dikeakos, Maria' <mdikeakos@bnl.gov>; Dorsch, William R <dorsch@bnl.gov>; 'Doug Feldman' <Douglas.Feldman@suffolkcountyny.gov>; Eng, Joseph (BHSO) <Joseph.Eng@science.doe.gov>; Genzer, Peter A <genzer@bnl.gov>; Granzen, Gerald (BHSO) <Gerald.Granzen@science.doe.gov>; Green, Timothy M <tgreen@bnl.gov>; 'Jerry Collins (jerry.collins@health.ny.gov)' <jerry.collins@health.ny.gov>; 'John Swartwout (E-mail) (john.swartwout@dec.ny.gov)' <john.swartwout@dec.ny.gov>; Kwok, Cheuk <ckwok@bnl.gov>; Mahler, Sarah <swiley@bnl.gov>; Mattson, Gail <gmattson@bnl.gov>; McCann, Michael (BHSO) <Michael.McCann@science.doe.gov>; Paquette, Douglas E <paquette@bnl.gov>; 'pensak.mindy@epa.gov' <pensak.mindy@epa.gov>; Pichs, Maria (CONTR) <Maria.Pichs@science.doe.gov>; Racaniello, Vincent <vjr@bnl.gov>; 'Rebecca Quail (rebecca.quail@dec.ny.gov)' <rebecca.quail@dec.ny.gov>; Remien, Jason <remien@bnl.gov>; Shea, Carol <shea@bnl.gov>; 'Steve Karpinski (steven.karpinski@health.ny.gov)' <steven.karpinski@health.ny.gov>; Sundin, Nora <nsundin@bnl.gov>; Theisen, Melanie <mschwart@bnl.gov>; 'Tom Papura (thomas.papura@dec.ny.gov)' <thomas.papura@dec.ny.gov>; Troutman, Anne <troutman@bnl.gov>; Gordon, Robert (BHSO) <Robert.Gordon@science.doe.gov>; Hartzell, Sharon <hartzell.sharon@epa.gov>; Mike Scorca (scorca.michael@epa.gov) <scorca.michael@epa.gov>; Mollin, Jessica <Mollin.Jessica@epa.gov>; Pocze, Doug (Pocze.Doug@epa.gov) <Pocze.Doug@epa.gov>; Bruno, Christopher <cbruno@bnl.gov>
Subject: October 4th IAG Teleconference

The next IAG teleconference is scheduled for Thursday, October 4, 2018, starting at 10 a.m.

We are now using BlueJeans conferencing services for the call. The call-in number is: (408) 740-7256, and the ID is 861 252 114.

Agenda

541331

1. Groundwater Update (Western South Boundary) – Vinnie Racaniello
2. Per- and Polyfluoroalkyl Substances (PFAS) Update – Doug Paquette
3. Document Review – Bob Howe

*The draft PFAS presentation for the October 11th Community Advisory Council Meeting will be distributed to the regulators early next week.
Thanks Bob

Bob Howe
Brookhaven National Laboratory
Groundwater Protection Group
Environmental Protection Division
Bldg. 462, Upton, New York 11973
Phone: (631) 344-5588
Cell: (631) 905-3141
Fax: (631) 344-7776

Comment Number	Section	Comment	Response
Letter from Andrew Rapiejko, SCDHS, September 13, 2018.			
1	1.0	Page 1, 1st paragraph, *"The samples were collected by the Suffolk County Department of Health Services under the Third Unregulated Contaminant Monitoring Rule (UCMR3 program)."* The referenced samples collected by the Suffolk County Department of Health Services (SCDHS) were not collected under the UCMR3 program. The samples were collected as part of a routine SCDHS surveillance monitoring program that included PFAS compounds.	Future reports will reference that the 2017 potable water samples were collected as part of a surveillance monitoring program.
2	3.0	Page 3, Section 3.0 Phase 2 Scope of Work, 1st paragraph. *"Following the development of the Phase I Work Plan, BNL confirmed via document review and interviews with long term and former employees that firefighting foam had been used at five additional areas, bring the total to eight known or suspected foam storage or release sites..."* In a letter to the New York State Department of Environmental Conservation dated December 22, 2017, the Department of Energy Site Manager Frank Crescenzo stated that *"there is no known source of PFCs at the BNL site."*	On July 23, 2018, DOE submitted a revised "Class B Fire Suppression Foam Usage Survey" to the NYSDEC. A copy of the revised transmittal is attached (Attachment 1). BNL has reviewed the available historical documentation and held discussions with long-term employees. Documents reviewed to date indicate that the first use of firefighting foam at the BNL dates to 1966. The last known use of Class B foam was in 2008. Although every effort was made to thoroughly document the historical use of firefighting foam at BNL, it is possible that additional information/documentation will be found as the

Comment Number	Section	Comment	Response
		However, the March 2018 *Work Plan/or the Characterization of Per-Fluorinated Compounds in Groundwater Within the Sources Water Contributing Areas of BNL Supply Wells* indicated there were three areas identified where AFFF was released to the environment. As indicated above, further reviews have revealed five additional release areas, bringing the total to eight sites. Have any additional potential releases to the environment of PFAS containing compounds been identified? Have the document reviews and employee interviews been completed? What is the timeframe for a complete and thorough assessment of potential PFAS releases to the environment at the BNL site expected to be completed?	investigation progresses. Any new findings will be discussed with the regulatory agencies as quickly as possible.
3	NA	Since landfills are known potential sources of PFASs, groundwater samples for PFASs should be collected downgradient of the current and former landfills sites.	BNL concurs and has prepared a list of Current and Former Landfill monitoring wells that will be sampled for PFAS (Attachment 2).
4	NA	Since the on-site sewage treatment plant is a potential source of PFASs, effluent samples and samples of all the existing OUV groundwater monitoring wells should be collected for PFASs.	In addition to sampling the STP effluent, BNL has prepared a list of existing OU V monitoring wells that will be sampled for PFAS (Attachment 2).
5	NA	Since the types of treatment in many of the groundwater remediation systems that are currently operating, or have operated in the past, do not remove PFASs, and any systems that use carbon were not specifically designed for the	BNL has prepared a list of treatment systems and associated extraction wells that will be sampled for PFAS (see Attachment 2).

Comment Number	Section	Comment	Response
		removal of PFASs, all effluent from groundwater remediation systems should be sampled for PFASs. This is of particular interest as the operations of these systems could be creating secondary, shallower PFAS plumes in the aquifer.	
6	NA	In order to asses impacts from other, not yet identified potential sources of PFASs, and the impact of the significant redistribution of groundwater (e.g., recharging from environmental remediation systems, cooling water, supply wells, etc.) that historically has occurred at the site, a comprehensive, site-wide PFAS monitoring program should be initiated.	Based upon the results of the Phase 2 characterization and the proposed sampling of the groundwater treatment systems identified in Attachment 2, BNL will identify where additional characterization work is needed to define the downgradient extent of the PFAS migration. This work may be carried out using a combination of existing monitoring wells and temporary wells.
7	NA	PFAS monitoring should be included in the quarterly sampling performed at the outpost monitoring wells for the SCWA's William Floyd Parkway and Country Club Drive Wellfields.	BNL agrees that the William Floyd "outpost wells" located on the BNL property should be sampled for PFAS during the next scheduled sample period. BNL has not previously participated in the sampling of outpost wells associated with the Country Club Drive well field.
8	NA	The SCDHS is currently in the process of installing profile monitoring wells in areas south of the BNL site, in order to assess water quality within groundwater contributing areas to a number of public supply wells in the vicinity. Since the SCDHS Public and Environmental Health Laboratory (PEHL) cannot analyze for PFASs, consideration should be given to providing the SCHDS with the analytical support to have PFASs tested in these profile wells.	BNL is taking a phased approach with the PFAS investigation. Once groundwater quality has been characterized in the eight suspected source areas, and the proposed sampling defined in Attachment 2 has been completed, BNL will evaluate the need for off-site characterization.

Attachment 1. Letter from Robert P. Gordon (USDOE) to Ted Bennett (NYSDEC) titled "Brookhaven National Laboratory (BNL) Revised Class B Fire Suppression Foam Usage Survey." Dated July 23, 2018.

Attachment 2. Phase 3 PFAS Characterization Locations for the Collection of PFAS Samples.

Department of Energy
Brookhaven Site Office
P.O. Box 5000
Upton, New York 11973

JUL 2 3 2018

Mr. Ted Bennett
New York State Department of
Environmental Conservation
Division of Environmental Remediation
625 Broadway – 12th Floor
Albany, New York 12233-7012

Dear Mr. Bennett:

SUBJECT: BROOKHAVEN NATIONAL LABORATORY (BNL) REVISED CLASS B FIRE SUPPRESSION FOAM USAGE SURVEY

Attached please find a revised survey form for "Class B Fire Suppression System Usage" at BNL. This form was revised after a follow-up investigation revealed new information concerning the use of Class B foam.

If you should have any questions please contact Jerry Granzen, of my staff, at (631) 344-4089.

Sincerely,

Robert P. Gordon
Acting Site Manager

Attachments:
Class B Fire Suppression Foam Usage Survey

cc: B. Jankauskas, NYSDEC
G. Mattson, BSA
W. Dorsch, BSA
D. Paquette, BSA
J. Remien, BSA

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Class B Fire Suppression Foam Usage Survey Questions

If possible, please complete the fillable PDF survey available at:

http://www.dec.ny.gov/docs/remediation_hudson_pdf/survey2.pdf

Instructions: Please answer all questions with respect to the period of current ownership/operation. In the event information is available regarding prior owners or operators, include it in the responses.

Please return the completed survey (PDF file) via email to derweb@dec.ny.gov by **July 15, 2016**. Non-electronic responses must be mailed to the following address: Ted Bennett, NYSDEC, Division of Environmental Remediation, 625 Broadway (12th Floor), Albany, NY 12233-7012.

If you have any questions, contact Ted Bennett at (518) 402-9764 or by email at theodore.bennett@dec.ny.gov

1. Facility Name: Brookhaven National Laboratory
2. Facility Address: P.O. Box 5000

   City/Town: Upton

   State: New York

   Zip Code: 11973
3. Period of Facility Ownership: 71 years
4. Period of Facility Operation or Control: 71 years
5. Identities of Prior Facility Owners and Operators (to the extent available to current Owner/Operator): U.S. Government (U.S. Army)
6. Is any Class B fire suppression foam currently stored and/or used at the Facility? (●) Yes ( ) No

   If yes, please provide all known information about the type of Class B fire suppression foam currently stored and/or used, including:

   a. Date of purchase: July 30, 2010
   b. Manufacturer and type of Class B fire suppression foam stored: Ansulite 3x3 Low Viscosity
   c. Quantity of Class B fire suppression foam stored: 95 gallons
   d. % PFOS/A concentrate: 0.0%
   e. Method of storage: Fire apparatus foam tanks/5-gallon pails
   f. Other relevant information:

7. Has any Class B fire suppression foam ever been stored and/or used at the Facility? (●) Yes ( ) No ( ) Unknown

   If yes, please note:

   a. Dates of storage: 1968 - present
   b. Manufacturer and type of Class B fire suppression foam stored: Ansulite 3x3 Low Viscosity*
   c. Quantity of Class B fire suppression foam stored: Ansulite = 95 gallons*
   d. % PFOS/A concentrate: 0.0% for Ansulite*
   e. Method of storage: Fire apparatus, containers, and fire suppression systems.
   f. Other relevant information: *No data available on older foam manufacturers or formulations

8. Has Class B fire suppression foam ever been used for training purposes at the Facility? (●) Yes ( ) No ( ) Unknown

   If yes, please note:

   a. Dates and frequency of training: Periodic from 1968 - 2008.
      i. If exact information is not available, please provide an estimate:
         1. 1-10 times over 10 years (●)
         2. 11-50 times over 10 years ( )
         3. 50 or more times over 10 years ( )
   b. Manufacturer and type of Class B fire suppression foam used in training: Unknown.
   c. Quantity of Class B fire suppression foam used in training: Unknown.
   d. Other relevant information: Last known training was in 2008.

9. Has Class B fire suppression foam ever been used for firefighting or other emergency response purposes at the Facility? ( ) Yes (●) No ( ) Unknown

   If yes, please note:

   a. Date of emergency response:
      i. If exact information is not available, please provide an estimate:
         1. 1-10 times over 10 years ( )
         2. 11-50 times over 10 years ( )
         3. 50 or more times over 10 years ( )
   b. Manufacturer and type of Class B fire suppression foam used in firefighting or emergency response:
   c. Quantity of Class B fire suppression foam used in firefighting and emergency response:
   d. Other relevant information:

10. Has the Facility ever experienced a spill or leak of Class B fire suppression foam? (●) Yes ( ) No ( ) Unknown

If yes, please note:

a. Date of spill/leak: Known accidental spill in July 1973
   i. If exact information is not available, please provide an estimate:
      1. 1-10 times over 10 years ( )
      2. 11-50 times over 10 years ( )
      3. 50 or more times over 10 years ( )
b. Manufacturer and type of Class B fire suppression foam spilled/leaked: Unknown
c. Quantity of Class B fire suppression foam spilled/leaked: Unknown
d. Other relevant information: Several fire suppression system tests also released foam to ground

11. Has your Facility ever been responsible for the use of Class B fire suppression foam at a location other than the Facility (i.e. offsite training, emergency response, or spill)? ( ) Yes ( ) No (●) Unknown

If yes, please note:

a. Date of each offsite use:
   i. If exact information is not available, please provide an estimate:
      1. 1-10 times over 10 years ( )
      2. 11-50 times over 10 years ( )
      3. 50 or more times over 10 years ( )
b. Manufacturer and type of Class B fire suppression foam used:
c. Quantity of Class B fire suppression foam:
d. Other relevant information:

☑ **Upon completing the survey you must place an "✓" in this box to certify the following:**

Certification. I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Robert Gordon

Name of person who completed and submitted responses to Survey (the legal owner, operator, or their representative authorized to complete and submit Survey)

Robert Gordon,Acting Site Manager,USDOE Brookhaven Site Office

Name and Official Title

53 Bell Avenue, Building 464, Upton, NY 11973-5000

Address

(631) 344-3346

Telephone Number

robert.gordon@science.doe.gov

E-mail Address

JUL 2 3 2018

Date Certified or Signed

Clear Form

Attachment 2
Phase 3 PFAS Characterization
Locations for the Collection of PFAS Samples (10/3/18 DRAFT)

HFBR Tritium Pump and Recharge System (6 samples)
EW-9
EW-10
EW-11
EW-16
System Influent and Effluent (Carbon Vessel)

OU III Middle Road Treatment System (9 samples)
RW-1
RW-2
RW-3
RW-4
RW-5
RW-6
RW-7
System Influent and Effluent (Air Stripper Tower)

OU III South Boundary Treatment System (9 samples)
EW-3
EW-4
EW-5
EW-6
EW-7
EW-8
EW-17
System Influent and Effluent (Air Stripper Tower)

OU I South Boundary Treatment System (4 samples)
EW-1
EW-2
System Influent and Effluent (Air Stripper Tower)

OU III Western South Boundary (8 samples)
WSB-1
WSB-2
WSB-3 (following system startup)
WSB-4 (following system startup)

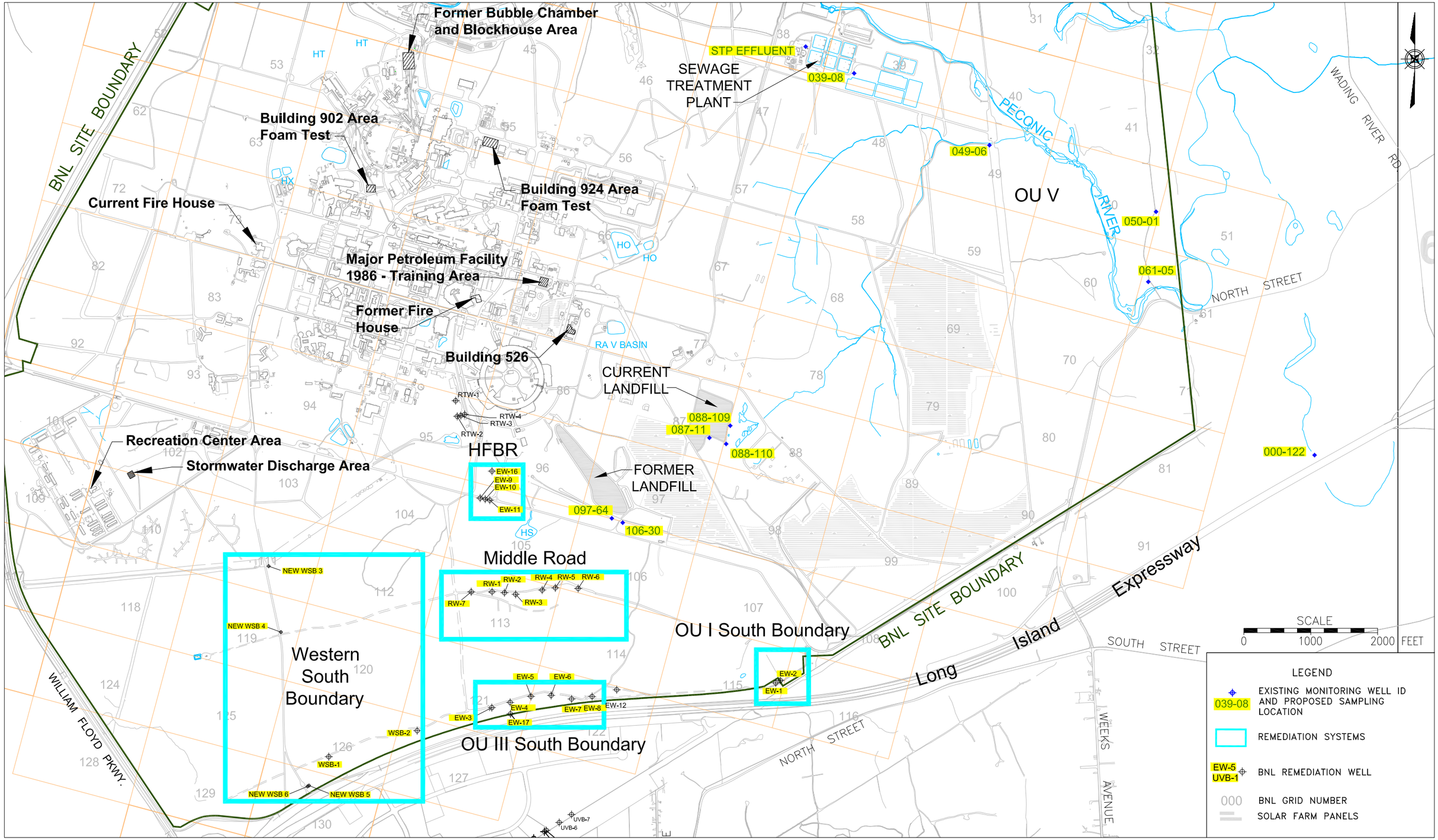
WSB-5 (following system startup)
WSB-6 (following system startup)
System Influent and Effluent (Air Stripper Tower)

Current Landfill (3 samples)
087-11
088-109
088-110

Former Landfill (2 samples)
097-64
106-30

Sewage Treatment Plant (1 sample)
Effluent Sample

OU V Monitoring Wells (5 samples)
039-08
049-06
050-01
061-05
000-122



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BROOKHAVEN NATIONAL LABORATORY

ENVIRONMENTAL PROTECTION DIVISION

TITLE:

PHASE 3 PFAS CHARACTERIZATION
PROPOSED PFAS SAMPLE LOCATIONS

2018 PFAS CHARACTERIZATION

DWN:	VT:HZ.:	DATE:	PROJECT NO.:
AJZ	–	10/01/18	–
CHKD:	APPD:	REV.:	NOTES:
WRD	WRD	–	–

FIGURE NO.: 1 – ATTACHMENT 2